FROM ALICE TO ALITA: ADVENTURE OF SELF-POWERED SMART SYSTEM
(onsite and online)

Seminar jointly organized by the Department of Mechanical Engineering and the HK Institute of Quantum Science and Technology

Date: 9th January, 2024 (Tuesday)
Time: 11:00a.m. (Hong Kong Time)
Venue: CPD-LG.34, Centennial Campus
HKU

Speaker: Professor Haixia (Alice) Zhang
Peking University
China

Alice Wonderlab: http://www.alicewonderlab.com

Zoom Online Lecture:

Meeting ID: 923 6189 8401
Password: 508873

Abstract:

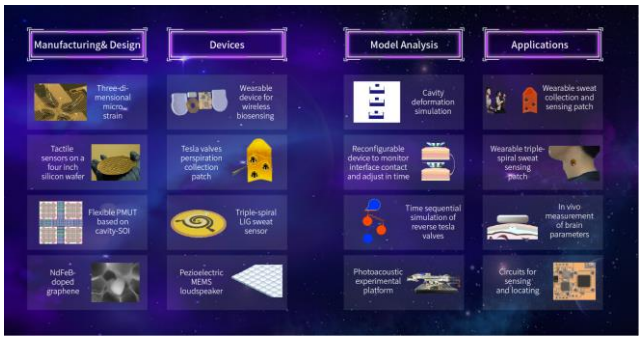
With the blooming of consumer electronics and sensor network in the past decades, the vast applications and wide distributions of low-power consumption mobile electronics have reached every corner of our daily life, also make another story about energy beyond conventional batteries with limit life, which we named it as self-powered Smart System. In this talk, Prof. Haixia (Alice) Zhang will tell us her adventure in this field.

The talk will include three parts,

First, Alice will start with her own experience, how to find an exciting research topic from daily life, and how to make soft, flexible and functional materials to meet the requirements of smart system;

Second, Alice will give some examples of high performance TENG based hybrid nanogenerator, then multi-functional active sensors and actuators based on the same principle, including the method to mimic human skin with stretch ability and conductivity. These efforts make the system self-power or with low-power consumption, meanwhile, can adaptive with the environmental change with high sensitivity and fast responsibility.

Last, Alice will give some demonstrations of self-powered smart system, for example, skin-on-chip, smart watch, health monitor patch, will be introduced. The perspective of this field will be discussed in the last, like, how to make a really Alita? What's next?



References:

1. Haobin Wang, Zehua Xiang, Pengcheng Zhao, Ji Wan, Yu Song, Liming Miao, Jinjing Cui, Hang Guo, Chen Xu, Mengdi Han*, & Haixia Zhang*, Double-sided multiplexed sensing system as human-ambience interfaces, https://doi.org/10.1021/acsnano.2c05299， ACS Nano, 2022
2. Liming Miao,Yu Song, Zhongyang Ren, Chen Xu, Ji Wan, Haobin Wang, Hang Guo, Zehua Xiang, Mengdi Han,* and **Haixia Zhang***, Three-dimensional temporary-magnetized soft robotic structures for enhanced energy harvesting, Advanced Materials, DOI: 10.1002/adma.202102691
3. *Hang Guo, Haobin Wang, Zehua Xiang, Hanxiang Wu, Ji Wan, Chen Xu, Haotian Chen, Mengdi Han* and **Haixia Zhang***, *Soft Human-Machine Interface with Triboelectric Patterns and Archimedes Spiral Electrodes for Enhanced Motion Detection, Adv. Funct. Mater. 2021, 2103075 , DOI:10.1002/adfm.202103075*

Biography:

Dr. Haixia Zhang, Professor, School of Integrated Circuit, Peking University. Dr. Zhang is a pioneer and world leader for her outstanding research achievements and creativity in micro/nanotechnology. She authored and co-authored 300+ peer reviewed scientific articles on the prestigious journals. Dr. Zhang is the founder iCAN and iCANX Talks.

Dr. Zhang won numbers of Awards/Honors, including won National Invention Award of Science & Technology at 2006, Education Award at 2013 and 2017 in Beijing City, Geneva Invention Gold Medal at 2014. She was honored as the Excellence Teachers in Beijing City at 2017, Top10 supervisors in Peking University at 2017. She won the Medal of May Day in 2018. She won the 2nd prize of National Education Award 2018 and elected as the member of Innovation Education Committee in Chinese Ministry of Education at 2018. She was listed in Forbes Top 50 Female Scientists at China in 2020, Nano Energy Award 2021. 2022 Elsevier Most Cited Chinese Researchers, and 2023-2025 IEEE Distinguish Lecturer.

ALL INTERESTED ARE WELCOME

For further information, please contact Prof. Nicholas Fang at 3917 2639.